

Math 73/103 Homework week 3

Last Updated: September 30, 2021

Wednesday 09/29/2021

1. Let X be a compact metric space. Show that a uniformly convergent sequence in $C(X)$ is uniformly bounded.
2. Let \mathcal{F} be the family of functions $f_n(x) = x^n$ on $X = [0, 1]$. Show that \mathcal{F} is equicontinuous at each $x \in [0, 1)$. (HINT: The Mean Value Theorem may be helpful)
3. Show that an equicontinuous family of functions on a compact metric space is uniformly equicontinuous as stated in lecture.